IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

Inventors: Fernandez, et al.	)	Attorney Docket No.: FERN-P004
	)	
Application No.: 09/145,167	)	Examiner: Wu, Ratao
	)	
Filed: 09/01/1998	)	Art Unit: 3628
	)	
For: ADAPTIVE DIRECT TRANSACTION FOR NETWORKED CLIENT GROUP	)	Confirmation No. 5652
	)	
	)	

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APPEAL BRIEF

IN SUPPORT OF APPELLANT'S APPEAL
TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Dear Sir:

Appellant hereby submits the following Brief pursuant to 37 CFR § 41.37 in support of

an appeal from a final action dated December 27, 2006, which rejected all claims, as well as an

advisory action dated April 4, 2007, which maintained such final rejection; Appellant filed

Notice of Appeal on April 27, 2007. Appellant respectfully requests consideration of this appeal

by the Board of Patent Appeals and Interferences for allowance of the case.

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   A.   Examiner erred in rejecting claims 21-22 and 24-25 because the claimed invention is not rendered obvious under 35 U.S.C. 103(a) by the combination of Alexander et al. and Ballantyne et al., modified in light of Peifer et al.

   B.   Examiner erred in rejecting claims 23 and 26 because the claimed invention is not rendered obvious under 35 U.S.C. 103(a) by the combination of Alexander et al. and Ballantyne et al., modified in light of Peifer et al., and further in view of Hill et al.

I. *Real party in interest*

Real party in interest is DENNIS S. FERNANDEZ, an individual, assignee of the inventors' entire interest, having a residence at 1175 Osborn Avenue, Atherton, CA 94027.

II. *Related appeals and interferences*

Related proceedings include:

A. Decision on Appeal, to this application, mailed on July 31, 2003 (see **Related proceedings appendix**);

B. Divisional Application No. 09/952,285 with:

    i. Appeal Brief filed on February 10, 2005,

    ii. Notice of Allowability mailed on June 6, 2005 (issued as U.S. Patent No. 6,963,899), and

    iii. U.S. Patent No. 6,963,899 is the subject of a pending patent infringement suit filed on March 12, 2007 in the Northern Federal District of Illinois, Chicago Office (Fernandez Innovative Technologies, L.L.C. v. General Motors Corporation et al, Case No. 1:2007cv01397); and

C. Divisional Application No. 09/952,329 with Appeal Brief filed on May 4, 2007.

To the best of Appellant's knowledge, there are no other prior or pending appeals or interferences related to the present appeal which will directly affect, be directly affected by, or have a bearing on the Board's decision.

III. *Status of claims*

Claims 1-20 stand cancelled in response to an Advisory Action by the Examiner mailed on 8/22/05.

Claims 21-26 stand finally rejected by the Examiner under the Final Office Action mailed on December 27, 2006 and are the subject of this appeal.

IV. *Status of amendments*

In an advisory action mailed April 4, 2007, Examiner indicated that the amendment filed on February 27, 2007, would not be entered for appeal and that the rejection of the claims would remain as stated in the final Office Action mailed December 27, 2006. All pending claims on appeal are provided in the **Claims appendix** as filed in the October 10, 2006 amendment.

V. *Summary of claimed subject matter*

Independent claim 21 recites, "An interactive digital television set-top apparatus for coupling to a network for providing contextually-mapped biomedical media service comprising: an interface for receiving a video stream from the network (Specification, page 6, lines 19-20; page 10, lines 14-17; a controller for causing the video stream to be stored in a digital video recorder, such stored video being accessible for play-back using a software search agent (Fig. 4; Specification, page 15, lines 8-13); and a personal biological sensor for generating a real-time signal for transmission via the network interface (Specification, page 14, lines 6-12; page 15, lines 15-21), the real-time signal enabling such set-top apparatus to be classified in a promotional group for targeted

messaging (Specification, page 7, lines 1-8), whereby a promotion video stream is directed to the set-top apparatus adaptively in response to the real-time signal (Specification, page 5, lines 3-5; page 21, lines 9-12), the received video stream comprising a biomedical expertise message for clinical diagnosis that is contextually mapped to a patient group by comparing automatically with an associated value stored in a database (Specification, page 20, lines 17-22) a patient diagnosis sensed using the sensor comprising a micromachined transducer coupled to a diagnosed patient (Specification, page 12, line 18) for measuring or monitoring an organic material of the patient coupled to the sensor transducer that senses the organic material, such that the sensor transducer generates therefrom the personal biological sensor signal for enabling such patient to be diagnosed via the biomedical expertise message that is adapted to the personal biological sensor signal measurement or monitoring of the organic material as generated by the sensor transducer (Specification, page 7, lines 1-8), the biomedical expertise message being scheduled for viewing by one or more patients belonging to the patient group (Specification, page 22, lines 2-3), the patient or promotional group being determined automatically by software for group analysis overlay that monitors patient sensor or sensor interface to process patient attribute in either group by comparing patient attribute with associated attribute stored in the database." (Specification, page 5, lines 1-8)

The novel invention in Claim 21 describes an advanced patient-group diagnosis feedback system which diagnoses one or more patients in a patient group via advanced sensors over a network and provides adaptive targeted group messaging based upon the sensed information. The system is comprised of one or more patient interfaces connected

to a server by a network. (Fig. 1) The patient interface comprising an interface, controller, storage, and sensor (Fig. 4), with the sensor is connecting to a patient for sensing organic material and the interface to send the sensed information as a signal in real-time to one or more servers. (Fig. 1) On the server, the patient's information signal is compared to a database of known complications by attributes which classify the patients into one or more groups. Meanwhile, the server concurrently runs software to monitor the information signals received from one or more patients and adaptively sending targeted group messages comprising a biomedical expertise message for diagnosis to specific patients or groups of patients based on the classification of the sensed information signals. The targeted group messages are received at the patient interface by the controller via the interface, with the controller able to store the video making it accessible for future play-back.

Dependent claim 22 further elaborates on the sensor claimed in 21 with sensor further comprising "a DNA or protein probe, whereby the promotion video stream comprises a tele-medicine application associated with sensed DNA or protein." (Specification, page 14, lines 14-18) This improvement leads to a more accurate diagnosis of the patient and more relevant group messaging.

Dependent claim 23 further elaborates on the sensor claimed in 21 with the improvement of "a GPS location device, whereby the promotion video stream comprises a vehicular or mobile application associated with sensed location." (Specification, page 5, line 22 – page 6, line 8) The limitation may advantageously facilitate informing a patient of his/her proximity to the nearest healthcare facilities (e.g., hospitals or

pharmacies), and may also inform medical staff of an arriving patient's estimated time of arrival.

Independent claim 24 recites, "An interactive digital television set-top method for providing contextually-mapped biomedical media service comprising: receiving a video stream via the network interface (Specification, page 6, lines 19-20; page 10, lines 14-17); storing the video stream in a digital video recorder for play-back, such stored video being accessible using a software search agent (Fig. 4; Specification, page 15, lines 8-13); and a personal biological sensor for generating a real-time signal for transmission via the network interface (Specification, page 14, lines 6-12; page 15, lines 15-21), the real-time signal enabling such set-top apparatus to be classified in a promotional group for targeted messaging (Specification, page 7, lines 1-8), whereby a promotion video stream is directed to the set-top apparatus adaptively in response to the real-time signal (Specification, page 5, lines 3-5; page 21, lines 9-12), the received video stream comprising a biomedical expertise message for clinical diagnosis that is contextually mapped to a patient group by comparing automatically with an associated value stored in a database (Specification, page 20, lines 17-22) a patient diagnosis sensed using the sensor comprising a micromachined transducer coupled to a diagnosed patient (Specification, page 12, line 18) for measuring or monitoring an organic material of the patient coupled to the sensor transducer that senses the organic material, such that the sensor transducer generates therefrom the personal biological sensor signal for enabling such patient to be diagnosed via the biomedical expertise message that is adapted to the personal biological sensor signal measurement or monitoring of the organic material as generated by the sensor transducer (Specification, page 7, lines 1-8), the biomedical

expertise message being scheduled for viewing by one or more patients belonging to the patient group (Specification, page 22, lines 2-3), the patient or promotional group being determined automatically by software for group analysis overlay that monitors patient sensor or sensor interface to process patient attribute in either group by comparing patient attribute with associated attribute stored in the database." (Specification, page 5, lines 1-8)

The novel invention in Claim 24 describes an advanced patient-group diagnosis feedback method which diagnoses one or more patients in a patient group via advanced sensors over a network and provides adaptive targeted group messaging based upon the sensed information. The method is comprised of connecting one or more patient interfaces to a server by a network. (Fig. 1) The patient interface comprising an interface, controller, storage, and sensor (Fig. 4), with the sensor connecting to a patient for sensing organic material and the interface to send the sensed information as a signal in real-time to one or more servers. (Fig. 1) On the server, the patient's information signal is compared to a database of known complications by attributes which classify the patients into one or more groups. Meanwhile, the server concurrently runs software to monitor the information signals received from one or more patients and adaptively sends targeted group messages comprising a biomedical expertise message for diagnosis to specific patients or groups of patients based on the classification of the sensed information signals. The targeted group messages are received at the patient interface by the controller via the interface, with the controller able to store the video making it accessible for future play-back.

Dependent claim 25 further elaborates on the sensor claimed in 24, adding the limitation of "a DNA or protein probe, whereby the promotion video stream comprises a tele-medicine application associated with sensed DNA or protein." (Specification, page 14, lines 14-18) This improvement leads to more accurate diagnosis of the patient and more relevant group messaging.

Dependent claim 26 further elaborates on the sensor claimed in 24 with the improvement of "a GPS location device, whereby the promotion video stream comprises a vehicular or mobile application associated with sensed location." (Specification, page 5, line 22 – page 6, line 8) The limitation may advantageously facilitate informing a patient of his/her proximity to nearby healthcare facilities (e.g., hospitals or pharmacies), and may also effectively inform medical staff of an arriving patient's estimated time of arrival.

VI. *Grounds of rejection to be reviewed on appeal*

    A. Whether claims 21, 24, 22, and 25 are unpatentable under 35 U.S.C. 103(a) over Alexander et al. (US 6,177,931), in view of Ballantyne et al. (US 5,867,821), and further in view of Peifer et al. (US 5,987,519).

    B. Whether claims 23 and 26 are unpatentable under 35 U.S.C. 103(a) over Alexander et al. (US 6,177,931), in view of Ballantyne et al. (US 5,867,821), in further view of Peifer et al. (US 5,987,519) and further, in view of Hill et al. (US 5,857,155).

VII.   *Argument*

    A. Examiner erred in rejecting claims 21-22 and 24-25 because the claimed invention is not rendered obvious under 35 U.S.C. 103(a) by the combination of Alexander et al. and Ballantyne et al., modified in light of Peifer et al.

    To properly reject Appellant's claims as invalid under 35 U.S.C. 103(a) the Examiner must: (1) determine the scope and content of the prior art; (2) ascertain the differences between the prior art and the claims at issue; (3) resolve the level of ordinary skill in the pertinent art; and furthermore in determining that Appellant's invention is obvious, (4) the Examiner ought to consider secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966).

    Generally the scope of the claims at issue covers an apparatus (claims 21-22) and related method (claims 24-25) for delivering contextually-mapped biomedical media services to a patient group via a network. In significant part, the media service is delivered automatically to the patient group via a video stream containing a biomedical expertise message for clinical diagnosis to a network interface in a digital television set-top, adaptively in response to real-time signaling from patient-coupled personal

biological sensor. In particular, the sensor is a transducer that has been micro-machined for measuring or monitoring patient organic material to generate the sensor signal; and more particularly, software which overlays group-analysis determines a classification of the patient group automatically for targeted messaging by monitoring patient sensor information and comparing patient attributes.

Hence in a novel contextually-mapped manner for adaptively targeting group messages in a biomedical environment, the biomedical expertise message is targeted to the patient group that is classified by software overlay for group-analysis using real-time sensor data to automate digital video delivery of clinical diagnostic services.

In the final Office Action dated 12/27/2006, the Examiner determined, among other things, the scope and content of prior-art Alexander (US patent 6177931) as disclosing interactive television program that allows user access to product information, particularly including "auto-surfing" software that transmits advertisements according to television viewer profile. Also the Examiner determined, among other things, the scope and content of prior-art Ballantyne (US patent 5867821) as disclosing patient care station for accessing patient diagnosis data, particularly including "classification" of user as patient or medical personnel. Furthermore the Examiner determined, among other things, the scope and content of prior-art Peifer (US patent 5987519) as disclosing patient monitoring station and various medical devices.

Appellant respectfully contends that the Examiner unreasonably combined the Alexander and Ballantyne references, in particular, to reject the claimed invention as obvious under §103. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *KSR International Co. v. Teleflex Inc. et al.* 550 U.S. 127 (2007).

Upon looking carefully at prior art cited by the Examiner, the level of ordinary skill in the pertinent art is limited technically and in practice to within either biomedical or non-biomedical fields. Alexander pertains to the field of television systems (non-biomedical), with skills ordinarily pertinent to providing electronic program guides and related advertising. Ballantyne pertains to the field of personal health care information (biomedical), with skills ordinarily pertinent for providing diagnosis software and video communication. Peifer (biomedical) pertains to the field of telemedicine, with skills ordinarily pertinent for accessing medical sensors.

Further in the final Office Action dated 12/27/2006 (page 9, lines 11-14; and page 13, lines 14-17), the Examiner offered conclusory statements, that Alexander and Ballantyne would be obvious to combine due to "motivation of allowing targeted messaging in a biomedical environment", without articulating some rational underpinning to support the legal conclusion of obviousness. Yet other than such conclusory attempt to reconstruct

the claimed invention in hindsight by the Examiner merely picking and choosing non-biomedical prior-art (Alexander) to combine retrospectively with biomedical prior-art (Ballantyne), there is no apparent reason, design incentive, market force, or other helpful insight from common background knowledge generally (nor any teaching, suggestion or motivation) set forth objectively to substantiate such combination.

Moreover, the claimed invention is not a simple re-arrangement or substitution of old elements in the prior art, whereby each art or element performs the same function it had been known to perform. In particular, the established non-biomedical function of Alexander is to provide advertising in interactive television systems using advanced electronic programming guide with "auto-surfing" software according to viewer profile; while the established biomedical function of Ballantyne is to provide access by patient/medical personnel to personal health care information electronically using patient care station with "classification" software, among other things.

More importantly, the claimed invention changes the respective functions of cited prior art in extra-ordinary and un-common fashion, particularly whereby the function of Alexander would be modified un-obviously to target via interactive television systems biomedical expertise message for clinical diagnosis that is contextually mapped to a patient group; and whereby the function of Ballantyne would be modified un-obviously to provide access by a patient group that is determined automatically by software for group-analysis overlay which monitors particular patient sensor information and compares patient attributes.

It is respectfully submitted that such prior art, when thereby combined un-obviously in light of substantially changed and unconventional functions, would surprisingly yield unexpected benefits for targeting biomedical expertise messages adaptively based upon a patient's sensor data to a group of patients for clinical diagnosis thereof.

This result is unpredictable because a person having ordinary skill and conventional creativity at the time of the claimed invention would remain unfamiliar still with the notion of targeting patient-group messaging in a biomedical environment, and accordingly would not reasonably have been prompted to pursue or otherwise try within his or her technical grasp the novel advance of targeting via an interactive digital television system a biomedical expertise message to a group of patients based upon a particular patient's sensor data, whereby such message not only is adapted to personal biological sensor measurement or monitoring of organic material generated by a micro-machined transducer sensor coupled to the particular patient, but also comprises clinical diagnosis that is contextually mapped for servicing the entire group of targeted patients.

Also such resulting combination is unpredictable because biomedical technologies, such as Ballantyne and Peifer, have been conventionally considered to be unpredictable in nature and practical application, even when combined with non-biomedical technologies, such as Alexander.

In addition based upon secondary considerations of un-obviousness, the person of ordinary skill would be discouraged by objective skepticism that teaches health professionals away from combining interactive decision support technologies (e.g., targeted messaging) with clinical diagnostic practice (e.g., in a biomedical environment), suggesting that "the transfer of decision support technologies to general practice or to the general public are unlikely to be effective, given the importance of clinical experience to the risk assessment process." Wood, F., Prior, L., & Gray, J. (2003). Translations of risk: Decision-making in a cancer genetics service. Health, Risk, Society, 5(2), 185-198. (see attached: EXHIBIT)
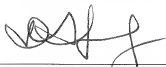
B. Examiner erred in rejecting claims 23 and 26 because the claimed invention is not rendered obvious under 35 U.S.C. 103(a) by the combination of Alexander et al. and Ballantyne et al., modified in light of Peifer et al., and further in view of Hill et al.

Appellant respectfully submits that claims 23 and 26 are patentable for the same reasons argued above, that claims 21-22 and 24-25 are patentable.

Conclusion

Appellant concludes that because the Examiner unreasonably combined the Alexander reference with the Ballantyne reference, it was improper to reject under 35 U.S.C. 103(a) claims 21-22 and 24-25 over Alexander and Ballantyne in view of Peifer, and claims 23 and 26 over Alexander, Ballantyne and Peifer in view of Hill.

Respectfully submitted,

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<u>Claims Presented For Appeal</u>
<u>(As filed in October 10, 2006 amendment)</u>

1-20 (**CANCELLED**).

21 (**PREVIOUSLY PRESENTED**) An interactive digital television set-top apparatus for coupling to a network for providing contextually-mapped biomedical media service comprising:

an interface for receiving a video stream from the network;

a controller for causing the video stream to be stored in a digital video recorder, such stored video being accessible for play-back using a software search agent; and

a personal biological sensor for generating a real-time signal for transmission via the network interface, the real-time signal enabling such set-top apparatus to be classified in a promotional group for targeted messaging, whereby a promotion video stream is directed to the set-top apparatus adaptively in response to the real-time signal, the received video stream comprising a biomedical expertise message for clinical diagnosis that is contextually mapped to a patient group by comparing automatically with an associated value stored in a database a patient diagnosis sensed using the sensor comprising a micromachined transducer coupled to a diagnosed patient for measuring or monitoring an organic material of the patient coupled to the sensor transducer that senses the organic material, such that the sensor transducer generates therefrom the personal biological sensor signal for enabling such patient to be diagnosed via the biomedical expertise message that is adapted to the personal biological sensor signal measurement or monitoring of the organic material as generated by the sensor transducer, the biomedical expertise message being scheduled for viewing by one or more patients belonging to the patient group, the patient or promotional group being determined automatically by software for group analysis overlay that monitors patient sensor or sensor interface to process patient

attribute in either group by comparing patient attribute with associated attribute stored in the database.

22 (**PREVIOUSLY PRESENTED**) The apparatus of claim 21 wherein:

the sensor comprises a DNA or protein probe, whereby the promotion video stream comprises a tele-medicine application associated with sensed DNA or protein.

23 (**PREVIOUSLY PRESENTED**) The apparatus of claim 22 wherein:

the sensor comprises a GPS location device, whereby the promotion video stream comprises a vehicular or mobile application associated with sensed location.

24 (**PREVIOUSLY PRESENTED**) An interactive digital television set-top method for providing contextually-mapped biomedical media service comprising the steps of:

receiving a video stream from via a network interface;

storing the video stream in a digital video recorder for play-back, such stored video being accessible using a software search agent; and

generating a personal biological sensor signal for transmission via the network interface, the signal enabling set-top classification in a promotional group for targeted messaging, whereby a promotion video stream is directed adaptively in response to the signal, the received video stream comprising a biomedical expertise message for clinical diagnosis that is contextually mapped to a patient group by comparing automatically with an associated value stored in a database a patient diagnosis sensed using the sensor comprising a micromachined transducer coupled to a diagnosed patient for measuring or monitoring an organic material of the patient

coupled to the sensor transducer that senses the organic material, such that the sensor transducer generates therefrom the personal biological sensor signal for enabling such patient to be diagnosed via the biomedical expertise message that is adapted to the personal biological sensor signal measurement or monitoring of the organic material as generated by the sensor transducer, the biomedical expertise message being scheduled for viewing by one or more patients belonging to the patient group, the patient or promotional group being determined automatically by software for group analysis overlay that monitors patient sensor or sensor interface to process patient attribute in either group by comparing patient attribute with associated attribute stored in the database.

25 (**PREVIOUSLY PRESENTED**) The method of claim 24 wherein:

the signal is generated by a DNA or protein probe, whereby the promotion video stream comprises a tele-medicine application associated with sensed DNA or protein.

26 (**PREVIOUSLY PRESENTED**) The method of claim 25 wherein:

the signal is generated by a GPS location device, whereby the promotion video stream comprises a vehicular or mobile application associated with sensed location.

IX. *Evidence appendix*

A. See attached, Wood, Fiona, Prior, Lindsay & Gray, Jonathon (2003). Translations of risk: decision making in a cancer genetics service. Health, Risk & Society, 5 (2), 1369-8575. Retrieved August 15, 2007, from http://www.informaworld.com/10.1080/1369857031000123957
B. *KSR International Co. v. Teleflex Inc. et al.* 550 U.S. 127 (2007).

Related proceedings appendix

See attached, "DECISION ON APPEAL." (9 pages) by the Board of Patent Appeals and Interferences (mailed July 31, 2003), regarding this application (i.e., Application No. 09/145,167).